

I claim:

17. A needle for use in injecting eggs with fluid substances, the needle comprising
 - a beveled, solid tip for penetration of the egg shell, and
 - a radial opening adjacent the tip for delivery of fluid.
18. A needle as recited in claim 17, wherein the needle tip is coated with titanium.
19. A needle as recited in claim 17, wherein the needle tip is beveled at an angle of from about 20 degrees to about 45 degrees.
20. A needle as recited in claim 17, wherein the needle thickness is from about 20 gauge to about 12 gauge.
21. An apparatus for delivering a predetermined volume of fluid through a hollow needle of an egg injection device, the fluid delivery apparatus comprising:
 - a pressurized fluid source;
 - tubing carrying fluid from the pressurized fluid source to the needle;
 - a first contacting member adapted to be rigidly connected to the egg injection apparatus;
 - and
 - a second contacting member reciprocally connected to the first contacting member,wherein the tubing passes between the members for pinching the tubing closed when the contacting members are together and allowing fluid to flow through the tubing when the contacting members are apart.
22. A fluid delivery apparatus as recited in claim 21, wherein the pressurized fluid source comprises a pressurized chamber for housing a bag of fluid.
23. A fluid delivery apparatus as recited in claim 21, wherein the volume of fluid delivered is controlled by the fluid pressure and the amount of time the contacting members are apart.
24. An apparatus for sanitizing an egg injection device including an injector assembly, the sanitizing apparatus comprising
 - a spray assembly for applying sanitizing solution to the injector assembly, the spray assembly comprising
 - a pan,

a spray shield extending upwardly from the sides of the pan, the spray shield adapted to receive an injector assembly of the egg injection device,

a plurality of spray nozzles in the pan,

means for supplying sanitizing fluid to the spray nozzles,

means for moving the spray nozzles back and forth across the pan during spraying for uniform coverage of the injector assembly.

Patented by the U.S. Patent and Trademark Office